

activity using a predetermined enzyme, adding said predetermined enzyme to said mixture, maintaining said enzymatic activity within said mixture for a predetermined time period under said adjusted pH and temperature conditions to obtain a release of phosphorous from said cereal feed ingredient, stabilising said mixture to prevent bacteria formation and preserving said stabilised mixture as a feed ingredient.

REMARKS

Claim 1 has been amended to explicitly specify that the pH of the liquid hydrolysate is neutral and to further explicitly state that the liquid hydrolysate is used as a media for the process. The remaining claims are unamended. Claims 1-15 remain in this application and stand for examination. Reconsideration and reexamination are requested in view of the foregoing amendments and the comments made hereinafter.

Rejection of claims 12 and 15 for indefiniteness

The Examiner rejects claims 12 and 15 under 35 U.S.C. 112, second paragraph.

With respect and with reference to claim 12, the word "other" is an adjective modifying the noun "fiber degrading enzymes". It seems clear that the claim encompasses a wide variety of fiber degrading enzymes beyond those explicitly set forth and reconsideration is requested.

With respect and with reference to claim 15, it seems

clear to what processes that claim now refers and the Markush doctrine is a well accepted exception to the traditional ban on alternative language and should be acceptable as it stands. If the Examiner feels this is not so, would the Examiner please cite a rule or statute for this rejection.

Rejection of claims 1-15 for obviousness

The Examiner rejects claims 1-15 under 35 U.S.C. 103(a) as being unpatentable over Document WO 98/34498 (Saxby et al) and the Stone et al document in view of EP 0321004 and Nielsen et al United States Patent 5,989,600.

WO 98/34498, commonly owned and naming inventors common with the present application, is dissimilar. The '498 application utilises the addition of a natural ingredient, namely wheat bran, as a source of phytase as the applicant noted in its paper of November 8, 2002. The '498 document teaches that the modification of the plant protein in combination with the krill hydrolysates is intended to be carried out by endogenous enzymes rather than exogenous enzymes and no disclosure of the addition of exogenous enzymes is made.

Stone et al, also well known to the applicant, teach using wheat bran as a source of phytase (like aforementioned Saxby et al) to be added to a mixture of fish silage (not with fish hydrolysate as a media). The fish silage will have a pH of 4 or lower since it is made from the action of endogenous acid proteases present in the fish or fish waste. A source of cereal meal is added. The wheat bran is used to reduce the content of

phytic acid in the cereal meal at room temperature over a long period of time (thirty(30) or so days of incubation). The primary purposes of the acid in the silage is to promote liquefaction by acid-acting proteases and to stabilise the end product.

United States Patent 5,989,600 (Nielsen) teaches first treating a plant meal with phytase and subsequently using proteolytic enzymes. The order is important. If the proteases are first used, the phytase treatment will be imperiled because the proteases will digest the phytase enzyme which is also of course a protein. In addition, the processes of Neilsen are carried out in water-based media (not a fish hydrolysate or even plant hydrolysate media). When mixing a first hydrolysate with plant meals, there is no further proteolytic transformation of the protein fraction present in the plant meal. This is so because it is believed the neutral fish hydrolysate hydrolysis has been carried out to completion and there is a high quantity of free amino acids and other products present that act as inhibitors preventing further hydrolysis. In addition, altering the pH from 7 to 5.5 further reduces the capacity of the neutral proteolytic enzymes in the fish hydrolysate to work on the plant protein fraction of the mixtures (and includes the working capacity of the added phytases). The water added to the plant meal to reduce phytic acid will have to be removed which is energy consuming and not economical.

EPO 321 004 also teach water as a media to carry out the phytase enzymatic reaction rather than fish hydrolysate with its inherent disadvantages as set forth above. The '004 document

further teaches sulfur dioxide as a preservative which is dissimilar to the teachings of the present invention.

None of the references teach or suggest the invention according to the present application. MPEP 2143.01 provides:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggest the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed.Cir. 1990).

In the present case, it is clear that no suggestion has been made in any of the references to combine the teachings of the remaining references cited by the Examiner. Saxby et al do not teach the addition of exogenous enzymes. Stone et al teach an acidic fish silage and not a neutral pH liquid hydrolysate. And Nielsen and EPO '004 each teach a water based media with its inherent disadvantages. It would be difficult or impossible to combine the references cited in any combination without some type of modification and the CCPA and the Federal Circuit have consistently held that when a Section 103 rejection is based upon a modification of a reference that destroys the intent, purpose of function of the invention disclosed in the reference, such a proposed modification is not proper and a prima facie case of obviousness cannot be properly made.

Rejection of claim 15 for anticipation and/or obviousness

The Examiner rejects claim 15 under 35 U.S.C. 102(b) as

being anticipated by or, alternatively, as being obvious over
aforementioned WO98/34498 or aforementioned Stone et al or
EP0286056 or Vanderbeke et al United States Patent 5,554,399 or
Nielsen et al United States Patent 5,989,600 or WO 00/10404 or EP
0321004.

With respect, as claim 15 is a product by process claim
and since the differences between the process of the present
invention and the processes of the references cited by the
Examiner have been outlined above, it is clear that the product
according to each of the references is different from those of
the present case.

Today's paper is accompanied by a marked up version of
the claims which is attached and which is entitled "VERSION WITH
MARKINGS TO INDICATE CHANGES MADE".

For the information of the Examiner, the IPER received
on the corresponding application filed under PCT/CA02/00022 was
favorable. Copy of the IPER and the ISR on which it was based is
enclosed and it will be seen both the Saxby et al and the Stone
references cited by the United States examiner were considered
within the European Patent Office but were not considered to
adversely affect the favorable IPER of the claims under
consideration. And it cannot seriously be considered that the use
of a water-based media taken from EPO '004 and Nielsen '600 are
analogous processes.

In view of the above, reconsideration and withdrawal of
the rejections and objections is requested and allowance of

claims 1-15 is respectfully solicited.

Respectfully submitted,

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Per: _____

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VERSION WITH MARKINGS TO INDICATE CHANGES MADE

Twice

used as a media and having
a substantially neutral pH

1. [Amended] A method of adding a cereal feed ingredient to a liquid hydrolysate, adjusting the pH and temperature of the mixture of said cereal feed ingredient and said liquid hydrolysate in accordance with the optimal enzymatic activity using a predetermined enzyme, adding said predetermined enzyme to said mixture, maintaining said enzymatic activity within said mixture for a predetermined time period under said adjusted pH and temperature conditions to obtain a release of phosphorous from said cereal feed ingredient, stabilising said mixture to prevent bacteria formation and preserving said stabilised mixture as a feed ingredient.